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UNITED STATES DEPARTMENT OF AGRICULTURE  
Bureau of Agricultural Engineering

MONTHLY NEWS LETTER

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No. 7

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..                   DAVID LEROY YARNELL                   ..  
..                   1885-1937                   ..  
..                   -                   ..  
..       David Leroy Yarnell, senior drainage       ..  
.. engineer, died at his home at Iowa City, Iowa..  
.. March 9.                   ..  
..       Mr. Yarnell, a native of Iowa, held       ..  
.. degrees from Iowa State College and the       ..  
.. University of Iowa. He started work with       ..  
.. the Drainage Division in 1909. His studies       ..  
.. of the flow of water, begun in 1916, won       ..  
.. him world-wide recognition in the field of       ..  
.. hydraulics. In 1922 he was placed in charge..  
.. of investigations for the bureau at the hy-       ..  
.. draulic laboratory of the University of Iowa..  
.. where he remained until his death. In 1933       ..  
.. he was awarded the James R. Cross metal of       ..  
.. the American Society of Civil Engineers for       ..  
.. a paper on "The Effect of Turbulence on the       ..  
.. Registration of Current Meters"; which he       ..  
.. prepared in collaboration with the late       ..  
.. Prof. F. A. Nagler. He is the author of       ..  
.. more than 25 bulletins and papers. Mr.       ..  
.. Yarnell was a research engineer of out-       ..  
.. standing ability and his services with the       ..  
.. bureau will be sadly missed.                   ..  
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At the request of a group of pecan growers F. E. Staebner made a trip to southern Georgia early in March to inspect conditions and discuss problems of pecan grove irrigation. A conference was held at Albany, Ga. with growers, grove managers, and others. A number of groves were inspected and the irrigation possibilities reviewed. An estimate was prepared of the cost of irrigation of a part of one grove (the maximum that can be irrigated from the existing water supply) and the equipment probably will be installed soon.



On the return trip Mr. Staebner stopped at Athens, Ga. and talked with Prof. R. H. Driftmier, Prof. W. N. Danner, Jr., and Prof. W.O. Collins of the State University regarding the irrigation of pecans.

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February work of the 36 drainage camps of the Central District as reported by J. G. Sutton:

Excavation, 400,324 yards, requiring 7,903 man-days; clearing, 6,979,443 square yds, requiring 63,194 man-days; 11,960 linear feet of tile relaid, requiring 1,830 man-days, 11,870 man-days spent on other work, including structural and survey, 84,797 man-days spent on projects.

Mr. Sutton says there was comparatively little time lost during the month, adding that this is the second winter during which the drainage camps have operated with little loss of time. The chief difference in the work operations in winter as compared with other seasons is that most of the men employed on excavation are transferred to clearing work. The amount of tile relaid was much less than in summer months.

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Charles E. Gapen, former Chief of the Press Service of the Department, has been appointed Chief of the Editorial and Information Division to succeed R. D. Marsden who has been assigned to special duties in the Office of the Chief of Bureau

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Charles A. Bennett reports that fan tests are now beginning on an elaborate system of cotton piping at the Cotton Ginning and Fiber Laboratories at Stoneville, Miss. Flood dangers in the region appear to have subsided, and Mr. Bennett says road work and bridge construction to provide better access to the laboratories are now underway.

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During the week of March 8 J. E. Miller made an inspection of the Bureau of Plant Industry's Laboratory construction work near Charleston, S.C.

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W. W. McLaughlin spent several days in the Dakotas conferring with State officials on the economic feasibility of supplemental irrigation, and conservation of water supply for domestic and stock use. He then proceeded to Washington, D.C., where he remained for several weeks, consulting with Bureau officials and others on the work of the Division of Irrigation.

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Wells A. Hutchins spent the last part of February and early March at Bismarck, N. Dak., assisting State officials in drafting a water conservation law for North Dakota. The principles of the Montana water conservation law were followed in general, but were altered sufficiently to conform to North Dakota requirements and to give the administrative board broader powers over the development and utilization of water. The bill is reported to have passed the Legislature with the emergency clause permitting it to be put into effect immediately.

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An article entitled "Did Prehistoric Man Have some Knowledge of Water Conservation in the Construction of Ancient Dams and Levees?" prepared by Dean W. Bloodgood, was published in the Los Angeles "Conservation Activities." Mr. Bloodgood visited the experiment station of the Bureau of Plant Industry at Sacaton, Ariz., where the largest alfalfa fields in the world are being planted by the Government and will eventually be turned over to the Indians. The fields already in alfalfa contain about 9,000 acres with about 5,000



additional acres being prepared for planting this year. Seventy irrigators are required continuously to water the lands.

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R.A. Work reports that a bill providing an annual appropriation of \$6,000 to the Medford Branch of the Oregon Experiment Station for orchard operation and conduct of experiments has passed the Legislature. During the coming season the study of the relation of irrigation to pruning will be continued, using wider extremes in both moisture conditions and pruning. The studies of early versus late disking in of winter crop will be continued, as will the orchard soil moisture control studies. The latter is in co-operation with the Oregon Agricultural Extension Service.

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In connection with the project water spreading for storage underground, Dean C. Muckel reports that the run-off from Euclid Avenue, Upland, Calif., is diverted to the lower part of the Cucamonga spreading system. Several hundred acre-feet of water a year, he says, is spread from this source. Mr. Muckel attended the California Citrus Institute, held at San Bernardino, where papers were presented on "Water Extraction from Soils," "Underground Water in Southern California," and "Suitability of Colorado River Water for Citrus Irrigation Purposes in the South Coastal Plain".

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In connection with tests of basin irrigation as a protection against frost damage, Karl Harris reports that two grapefruit groves that were not irrigated during the cold weather lost an average of 45 c.c. per fruit between January 1 and January 27, and from January 27 to March 1 made an average gain of 88 c.c. per fruit. A grapefruit grove that was irrigated almost continuously during the cold weather lost only an average of 14 c.c. per fruit from January 1 to January 27 and has made a gain of 60 c.c. from January 27 to March 1.

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An informal talk on relation of irrigation to growth of citrus fruits was made by Colin A. Taylor before the San Fernando Citrus Center. He also talked on this subject before the Claremont Pomological Society.

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: ELBOW ROOM :  
: Editors need room in which to make legible changes :  
: in the copy and for writing headings. If all copy sent :  
: in for the Monthly News Letter were double-spaced, or even: :  
: triple-spaced, it would make the editors job easier and :  
: help to eliminate errors. :  
:.....

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R. B. Gray left Washington March 3 on an inspection trip in the southeastern and middle-western States. His itinerary included the Farm Tillage Machinery Laboratory at Auburn, Ala., and the Engineering laboratory at Ames, Iowa. He attended the Farm Chemurgic Conference at Omaha, March 9 and 10 and later conferred on engineering problems with men at Lincoln, Nebr.; Kansas City, Mo.; Manhattan, Kans.; Moline, Ill.; Chicago, Ill.; Lafayette, Ind.; and Columbus, Ohio.

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R.M. Merrill visited the Ohio Experiment Sta. at Wooster and the Homestead Valve Mfg. Co. at Coraopolis, Pa. March 10 and 11 to confer on problems connected with the vapor spraying project.



O. K. Hedden drove to Madison, Wis. with vapor spraying equipment to make tests for control of the pea aphid. The tests were made on artificially infested peas in the greenhouse. He returned to Toledo with a truck on which dusting equipment is to be mounted for field tests at Madison.

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Studies on equipment for ditch maintenance are being made for the Division of Drainage by D.A. Isler at Toledo, Ohio. Mr. Isler is using shop facilities and office space provided by the Div. of Mechanical Equipment at Toledo.

I.F. Reed reports from Auburn, Ala. that the 1936 results of the legume coverage studies carried on in connection with the cotton production project show that the different methods of plowing under vetch caused the yield of seed cotton to vary from 1239 to 1497 lbs. per acre. The gross variation in per acre value of the cotton produced, considering both quality and quantity was \$20.43. Plots are now being prepared for the 1937 study. The outline has been extended slightly to cover other promising methods and conditions.

From the sugar beet project at Davis, Calif., S.W. McBirney reports that two sets of plots have been put in with the new chain-feed sugar beet planting unit designed to obtain uniform seed distribution. One set planted at the rate of one seed ball per inch, or 14 to 15 lbs. per acre, is to compare time required for thinning and yields on plots planted with the new planter and check plots. The other at seeding rates varying from 10 to 20 lbs. per acre is to compare germination stands with those on check plots and to determine comparative thinning rates.

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G. A. Cumings left Washington March 17 in connection with fertilizer placement experiments in the southeastern states. A paper by Mr. Cumings on "Recent Developments Relative to Fertilizer Placement" has been submitted for publication in "Commercial Fertilizer".

L. G. Schoenleber and W.H. Redit left Washington March 17 for the Va. Truck Crop branch experiment Sta. at Onley, Va. where fertilizer placement experiments with potatoes are being conducted.

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In response to a request from S.O. Hill of the Bureau of Entomology and Plant Quarantine, E.M. Dieffenbach made a trip to Monticello, Fla., to advise on engineering problems.

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J.W. Rockey has just returned from a field trip on which he visited the experiment stations of Virginia, South Carolina, Georgia, Alabama, Tennessee and Kentucky. He was able to observe quite a number of water supply and sewage disposal systems, some of which have been installed very recently. In Georgia he was accompanied most of the time by J. W. Simons.

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Myron G. Cropsey of Hayward, Calif., has been appointed Junior Agricultural Engineer and assigned to duty with the farm structures information and exchange work of the Division of Structures.

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W. H. Hukill and A. H. Senner attended a meeting of the National Oil Burner and Air Conditioning Exposition at Philadelphia, on March 16.

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A. H. Senner addressed the Washington Alumnae section of the Van Rensselaer Polytechnic Institute on March 1 on the subject of the Department's work on oil burners.